

PATENT COOPERATION TREATY

From the
INTERNATIONAL SEARCHING AUTHORITY

PCT

To:

see form PCT/ISA/220

WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY
(PCT Rule 43bis.1)

Date of mailing
(day/month/year) see form PCT/ISA/210 (second sheet)

Applicant's or agent's file reference
see form PCT/ISA/220

FOR FURTHER ACTION
See paragraph 2 below

International application No.
PCT/GB2004/001513

International filing date (day/month/year)
07.04.2004

Priority date (day/month/year)
07.04.2003

International Patent Classification (IPC) or both national classification and IPC
B01J19/00, B01L3/00

Applicant
GLAXO GROUP LIMITED

1. This opinion contains indications relating to the following items:

- ☒ Box No. I Basis of the opinion
- ☒ Box No. II Priority
- ☐ Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- ☐ Box No. IV Lack of unity of invention
- ☒ Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- ☒ Box No. VI Certain documents cited
- ☐ Box No. VII Certain defects in the international application
- ☐ Box No. VIII Certain observations on the international application

2. FURTHER ACTION

If a demand for international preliminary examination is made, this opinion will usually be considered to be a written opinion of the International Preliminary Examining Authority ("IPEA"). However, this does not apply where the applicant chooses an Authority other than this one to be the IPEA and the chosen IPEA has notified the International Bureau under Rule 66.1bis(b) that written opinions of this International Searching Authority will not be so considered.

If this opinion is, as provided above, considered to be a written opinion of the IPEA, the applicant is invited to submit to the IPEA a written reply together, where appropriate, with amendments, before the expiration of three months from the date of mailing of Form PCT/ISA/220 or before the expiration of 22 months from the priority date, whichever expires later.

For further options, see Form PCT/ISA/220.

3. For further details, see notes to Form PCT/ISA/220.

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**WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY**

International application No.
PCT/GB2004/001513

Box No. I Basis of the opinion

1. With regard to the **language**, this opinion has been established on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.
 - ☐ This opinion has been established on the basis of a translation from the original language into the following language , which is the language of a translation furnished for the purposes of international search (under Rules 12.3 and 23.1(b)).
2. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application and necessary to the claimed invention, this opinion has been established on the basis of:
 - a. type of material:
 - ☐ a sequence listing
 - ☐ table(s) related to the sequence listing
 - b. format of material:
 - ☐ in written format
 - ☐ in computer readable form
 - c. time of filing/furnishing:
 - ☐ contained in the international application as filed.
 - ☐ filed together with the international application in computer readable form.
 - ☐ furnished subsequently to this Authority for the purposes of search.
3. ☐ In addition, in the case that more than one version or copy of a sequence listing and/or table relating thereto has been filed or furnished, the required statements that the information in the subsequent or additional copies is identical to that in the application as filed or does not go beyond the application as filed, as appropriate, were furnished.
4. Additional comments:

**WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY**

International application No.
PCT/GB2004/001513

Box No. II Priority

1. ☒ The following document has not been furnished:

- ☒ copy of the earlier application whose priority has been claimed (Rule 43*bis*.1 and 66.7(a)).
☐ translation of the earlier application whose priority has been claimed (Rule 43*bis*.1 and 66.7(b)).

Consequently it has not been possible to consider the validity of the priority claim. This opinion has nevertheless been established on the assumption that the relevant date is the claimed priority date.

2. ☐ This opinion has been established as if no priority had been claimed due to the fact that the priority claim has been found invalid (Rules 43*bis*.1 and 64.1). Thus for the purposes of this opinion, the international filing date indicated above is considered to be the relevant date.

3. Additional observations, if necessary:

Box No. V Reasoned statement under Rule 43*bis*.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Yes: Claims	
	No: Claims	1-23
Inventive step (IS)	Yes: Claims	
	No: Claims	1-23
Industrial applicability (IA)	Yes: Claims	1-23
	No: Claims	

2. Citations and explanations

see separate sheet

Box No. VI Certain documents cited

1. Certain published documents (Rules 43*bis*.1 and 70.10)

and / or

2. Non-written disclosures (Rules 43*bis*.1 and 70.9)

see form 210

Re Item I

Basis of the report

The present written opinion has been established as if the priority has been validly claimed and therefore, EP-A-1 336 430 and EP-A-1 336 432 have not been considered as part of the state of the art. However, the applicant's attention is drawn to the fact that these documents seem to be highly relevant.

Re Item V

Reasoned statement with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. The following document (D) is referred to in this communication; the numbering will be adhered to in the rest of the procedure:

D1: US 2002/008032 A1

D2: US 2002/046948 A1

D3: DE 101 22 133 A

D4: WO 01/68257 A

D5: US-A-6 046 056

D6: WO 01/89681 A

2. D1-D6 disclose systems comprising at least one channel having a cross-section in the micrometer range (e.g. from 0.1 to 500 μm), at least one sensor or detector (e.g. pH, oxygen temperature, pressure, CCD camera), means of varying a process parameter and a computer. The processes conducted in the devices are controlled by the signals sent by the sensors to the controlling unit, i.e. computer, which then sends an indication to change some parameter in the system. For example, if the temperature is too high the controlling unit sends a signal to increase the flow of heat exchange fluid. Other properties are similarly controlled. The documents disclose the use of the devices in, for example, chemical synthesis, high-throughput screening or biological assays. (See passages cited in the International Search Report.)

Therefore, the subject-matter of claims 1-23 is not novel and does not fulfill the requirements of Article 33(2) PCT.

3. The applicant's attention is drawn to the fact that feedback control in microfluidic

systems is well known in the art, as D1-D6 clearly illustrate.

Re Item VII

Certain defects in the international application

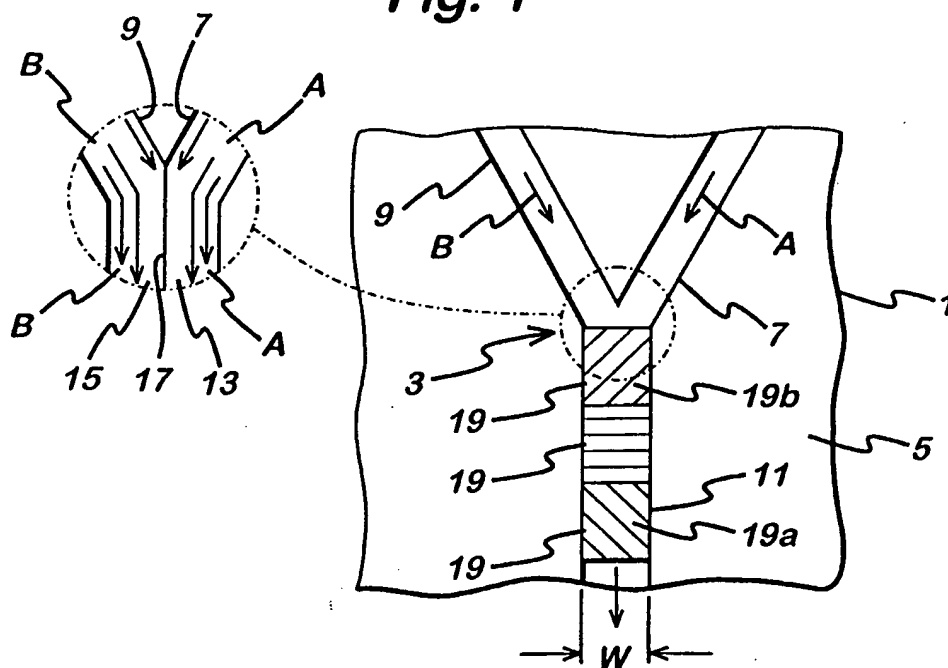
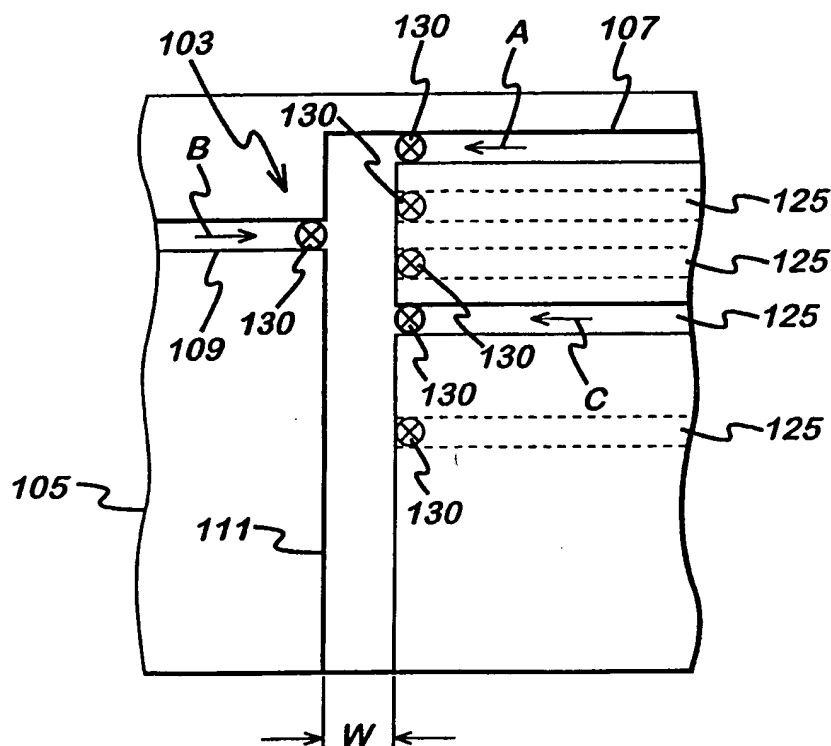
Contrary to the requirements of Rule 5.1(a)(ii) PCT, the relevant background art disclosed in the documents D1-D6 is not mentioned in the description, nor are these documents identified therein.

Re Item VIII

Certain observations on the international application

1. To fulfill the requirements of article 6 PCT the following have to be addressed:
 - 1.1. Although claims 10-15 refer back to independent claim 1 (a system), these claims do not contain any technical features of the device. The features therein disclosed relate to a process.
 - 1.2. The expression "... when appended to claim 11 ..." in claim 20 renders it unclear. It would therefore seem necessary to redraft the claim, so that the subject-matter for which protection is sought can be clearly perceived.
2. It is noted that on page 1, line 8, a document is incorporated by reference. The applicant's attention is drawn to the fact that certain member states may object to this formulation during the regional phase.

1/2

Fig. 1**Fig. 3**

2/2

Fig. 2

